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| THERAVANCE, INC. 901 GATEWAY BOULEVARD SOUTH SAN FRANCISCO, CA 94080 | | | EXAMINER SHIBUYA, MARK LANCE | |
| | | | ART UNIT 1639 | PAPER NUMBER |

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,017

Applicant(s)

JENKINS ET AL.

Examiner

Mark L. Shibuya

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 64-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 64-68 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

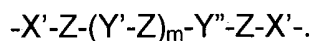
Status of the Claims

1. Claims 1-36 and 38-63 were cancelled in the Preliminary Amendment filed 2/13/2002. Claim 37 was cancelled in the Preliminary Amendment filed 4/30/2002. New claims 64-68 were added in the Preliminary Amendment filed 4/30/2002.

Election/Restrictions

2. The applicant is invited to note, that claims 64-68 in actuality contain a large number of separate and distinct inventions. Election of a single invention from within claims 64-68 is required as specifically set forth below. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Claims 64-68 are drawn to a method of preparing a library of compounds of the formula L-X-L wherein each L is independently a **ligand** which binds to a cell membrane transporter and X is a **linker** of the formula:



It is noted that claims 64-68 contain a large number of independent and distinct inventions based on the various groups representing **X', Z, Y', m, Y'', R', R'', and n**. The election of a single invention wherein the following symbols of the formula are defined is required:

X', Z, Y', m, Y'', R', R'', and n must all be specifically defined. **X', Z and R'** must be specifically defined at each separate occurrence. Each of **X', Z, Y', m, Y'', R', R'' and n** must be

specifically set forth where the specific structure (cyclic, non-cyclic) is shown and all variable groups are defined therein; wherein **X'** is -O-, -S-, -NH-, -C(O)-, -C(O)O-, -C(O)NH-, or a covalent bond; **Z** is either an alkylene, cycloalkylene, alkenylene, alkynylene, arylene, heteroarylene, heterocyclene or a covalent bond; and so on in turn for **Y'**, **m**, **Y''**, **R'**, **R''** and **n**, according to the limitations found in claims 64-68. Applicant's election under this restriction requirement should result in a *single* defined cyclic core structure showing all rings therein, which are further functionalized by the L, as set forth in claims 64-68.

Please see below paragraph 2 above and the below explanations, including in paragraph 4 of why Group I etc., contains a large number of independent and distinct inventions.

The inventions are distinct, each from the other because of the following reasons:

3. The inventions of claims 64-68, wherein library of test compounds are specifically defined as to **X'**, **Z**, **Y'**, **m**, **Y''**, **R'**, **R''**, and **n**, are test compounds with structurally distinct core structures and so that they are unrelated each to the other. Test compounds with structurally distinct core structures are thus deemed to normally constitute independent and distinct inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, test compounds with structurally distinct core structures are presumed to represent independent and distinct inventions, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37

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CFR 1.1141 et seq. The examination of more than one structurally distinct core structure would now pose an undue burden on the Office.

For this response to be complete and for search purposes, applicants should provide the ***chemical structure of the elected compound's core structure***, wherein the specific formula of the above identified elected Invention is defined either by **picture**, or by expressing the species in terms of the variables of the formula. For example, see Reaction Scheme 18, p. 211 of the instant Specification.

Because these inventions are distinct for the reasons given above and it is necessary to search for each one of the distinct subjects in places where no pertinent art to each of the other subject exists, restriction for examination purposes as indicated is proper. MPEP 808.02.

Election of Species

Distinct Species Claimed

4. This application contains claims directed to the following patentably distinct species of the claimed invention: 1) **ligand compounds** (as in step (a) of claim 1) and 2) **linker compounds** (as in step (c) of claim 1).

5. This application contains claims directed to the following patentably distinct species of the claimed invention: L-X-L, wherein L is a **ligand** and X is a **linker**; and L-X-L, wherein L is a **ligand compound** and X is a **linker compound**.

The specification at pp. 2-5, contemplates that cell membrane transporters for binding to ligands can be categorized as ion channels, ABC transporters, ion pumps, neurotransmitter transporter gene family. The specification at pp. 214-215, provides Tables of examples of ligands.

The specification at pp. 89-98 provides exemplary linkers identified as X-1 through X-418, and combinations thereof. Other preferred linkers are exemplified in Figures 6-11.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for a specific **ligand compound** and a specific **linker compound** and prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. **Currently, claims 64-68 are generic.**

Applicant is advised that a reply to this requirement *must* include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence

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now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

For this response to be complete and for search purposes, applicants should provide the **chemical structure of elected compounds species**, wherein each specific formula substituents of each of the above identified elected species are defined either by picture, or by expressing the species in terms of the variables of the formula.

Distinct Species Disclosed (Burdensome Search)

6. Claim 64 is generic to a plurality of disclosed patentably distinct species comprising (i) reactive functional groups on the **ligand compound** (as in step (b) of claim 1), wherein the reactive functional group is selected from the group consisting of $-NH_2$, $COOH$, $C(O)Y$, COH , OH , SH , $N=C=O$ and Y , where Y is halo; and (ii) two reactive functional groups in a **linker compound** (as instep (c) of claim 1) independently selected from the group consisting of $-NH_2$, $-COOH$, $-C(O)Y$, $-COH$, $-OH$, $-SH$, $-N=C=O$ and $-Y$, where Y is halo. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the

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record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

For this response to be complete and for search purposes, applicants should provide the ***chemical structure of elected compounds species***, wherein each specific formula substituents of each of the above identified elected species are defined either by picture, or by expressing the species in terms of the variables of the formula.

Conclusion

7. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Shibuya whose telephone number is


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(571) 272-0806. The examiner can normally be reached on M-F, 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark L. Shibuya
Examiner
Art Unit 1639


PADMASHRI PONNALURI
PRIMARY EXAMINER

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